

## **Nutrient availability in sago bark and empty fruit bunch composts for the growth of water spinach and green mustard**

### **ABSTRACT**

Sago bark (SB) and empty fruit bunch (EFB) are available abundantly as agricultural waste in Sarawak. This study was conducted to investigate the physicochemical characteristics of SB and EFB as composting materials and used as a plant growth medium. The SB and EFB composts were prepared in a separate container by mixing chicken manure as compost accelerator and wood chips as a bulking agent in dry weight equivalent ratio (1:1:1). The maturity and stability of compost in 60-day composting periods were evaluated via physicochemical characterization of the composts in terms of pH, elemental content, total ash content, moisture content and nutrient analyses. The effect of the compost usage as growth medium was assessed towards water spinach and green mustard via seed germination and pot study. After 2 months, the colour of both composts was dark brown with an earthy smell. The acidic pH of the initial composting stage has changed into alkaline pH after 60 days of composting. Total NPK present in the SB and EFB composts were 0.96% and 1.21%, respectively. The germination index (GI) for the studied vegetables was above 100%, while the pot study showed that vegetables in compost media has higher growth compared to the control, after 14 days. SB and EFB are renewable waste which can be used as an excellent compost and able to improve the quality of the soil.

**Keyword:** Sago bark; Empty fruit bunches; Agricultural waste; Compost